

### Remarks

The preceding amendments and following remarks are submitted in response to the Office Action mailed December 19, 2002, setting a three-month shortened statutory period for response ending March 19, 2002. Reconsideration, examination and allowance of all pending claims are respectfully requested.

On page 2 of the Office Action, the Examiner restricted Applicants' invention into two groups, namely, Group I drawn to a guidewire manufacturing assembly (claims 1-8 and 24-26), classified in class 606, subclass 108; and Group II drawn to a method of forming an atraumatic distal tip on a guidewire (claims 9-23), classified in class 228, subclass 224. According to the Examiner, restriction is proper since each Group is distinct from each other as process and apparatus for its practice, and since each Group has acquired a separate status in the art as shown by their different classification.

In an interview with the Examiner on December 13, 2002, a provisional election was made without traverse to prosecute the invention of Group II (claims 9-23). Applicants hereby affirm the provisional election directed to the invention of Group II.

On page 3 of the Office Action, the Examiner rejected claims 9-12, 14, 17-19 and 21 under 35 U.S.C. § 102(b) as being anticipated by *Salmon et al.* (U.S. Patent No. 5,458,585). Furthermore, on page 5 of the Office Action, the Examiner rejected dependent claims 15 and 22 under 35 U.S.C. § 103(a) as being unpatentable over *Salmon et al.* (U.S. Patent No. 5,458,585) in view of *Frechette et al.* (U.S. Patent No. 5,830,155).

Applicants respectfully assert that neither *Salmon et al.* nor *Frechette et al.* anticipates or renders obvious the invention of claims 9-12, 14-15, 17-19 or 21-22. *Salmon et al.* appear to disclose a tracking tip (50) comprising a wire coil (55) formed by wrapping a wire (80)

about a tapered mandrel (100). *See* Figures 2 and 3B. As shown in Figures 4A-4B, the wire coil (55) is placed on a holder (110), and a solder ball (65) dipped into and coated with a flux material is placed onto the distal end (70) of the wire coil (55) and heated with a soldering iron (115). With the holder (110) removed, the wire coil (55) is then attached to a work element (20).

In another embodiment illustrated in Figures 5A-5B, a small piece of polyimide film (130) is inserted into a gap formed in the wire coil (55). With the polyimide file (130) in place, the wire coil (55) is then placed onto the holder (110) and solder (135) is applied to the distal end (70) of the wire coil (55). As with the previous embodiment, the wire holder (110) is removed, and wire coil (55) is attached to the work element (20).

In contrast, claim 9 of the present invention recites:

9. A method of forming an atraumatic distal tip on a guidewire, comprising:  
    providing an elongate shaft having a distal end and a coil disposed along the length of the shaft;  
    providing a solder ball;  
    providing a quantity of flux proximate the solder ball;  
    disposing the solder ball at the distal end of the shaft; and  
    heating the solder ball, wherein heating activates the flux and allows the solder ball to at least partially melt and flow into the coil and around the shaft, wherein an atraumatic tip is formed by solder remaining at the distal end of the shaft.

(emphasis added). Similarly, claim 17 of the present invention recites:

17. A method of forming an atraumatic distal tip on a guidewire, comprising:  
    providing an elongate shaft having a distal end a coil disposed along the length of the shaft;  
    coupling the shaft to a holding fixture;  
    providing a solder ball;  
    providing a quantity of flux proximate the solder ball;  
    disposing the solder ball at the distal end of the shaft; and  
    heating the solder ball, wherein heating activates the flux and allows the solder ball to at least partially melt and flow into the coil and around the

shaft, wherein an atraumatic tip is formed by solder remaining at the distal end of the shaft.

(emphasis added).

As can be seen above, claims 9 and 17 both recite the step of providing an elongate shaft, and the step of heating the solder ball, wherein heating activates the flux and allows the solder ball to at least partially melt and flow into the coil and around the shaft. As set-forth in the specification, solder ball (22) can be coupled to a quantity of flux (24), and then heated with a heat source (26) to couple the coil (16) to the elongate shaft (12). *See* Specification at page 3, lines 10-13; Figure 2. This process may, in certain embodiments, reduce the need to perform additional processing steps such as grinding, filing, smoothing, etc. *See Id.* at page 6, lines 14-15. For example, the additional grinding step disclosed in *Salmon et al.* (*see* col. 5, lines 5-7) may be unnecessary since the solder is permitted to at least partially melt and flow around the elongate shaft in addition to the coil.

Unlike the present claimed invention, *Salmon et al.* do not disclose or suggest heating the solder ball, causing it to melt and flow into the coil and around the shaft. Instead, *Salmon et al.* appear to suggest using a temporary wire holder to solder a solder ball on the distal end of a wire coil. Nothing in *Salmon et al.*, either alone or in combination with *Frechette et al.*, suggests soldering the solder ball around an elongate shaft. Indeed, soldering the solder ball (65) to the wire holder (110) of *Salmon et al.* would prevent the user from withdrawing the holder (110) to perform the step of attaching the wire coil (55) to the work element (20), as discussed above. Since neither *Salmon et al.* nor *Frechette et al.* disclose or suggest the step of providing an elongate shaft, and heating the solder ball, wherein heating activates the flux and allows the solder ball to at least partially melt and flow into the coil and around the shaft,

Applicants respectfully assert that claims 9 and 17 are not anticipated or rendered obvious by the cited prior art.

Because claims 9 and 17 are allowable, dependent claims 10-12, 14-15, 18-19 and 21-22 are also allowable for the reasons stated above, and since they add significant elements to distinguish them from the prior art.

**Allowable Subject Matter**

The Examiner has objected to claims 13, 16, 20 and 23, but states that these claims would otherwise be allowable if rewritten in independent form to include all of the limitations of the base claim and any intervening claims. Because independent claims 9 and 17 are believed to be in condition for allowance, Applicants respectfully submit that dependent claims 13, 16, 20 and 23 are also in condition for allowance.

In view of the foregoing, all pending claims are believed to be in condition for allowance. Reexamination and reconsideration are respectfully requested. If the Examiner would like to discuss the application or its examination in any way, please call the undersigned attorney at (612) 677-9050.

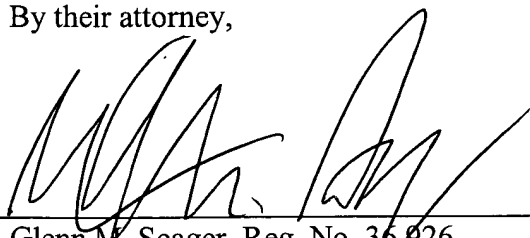
Respectfully submitted,

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By their attorney,

Date:

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